**Vision 21 Simulation Meeting**
**Iowa State University**
**Ames, Iowa**
**November 19-20, 2002**

## Agenda

**Tone:** informal working meeting

**Objectives:**

- Review objectives, and the accomplishments and their significance, of current Vision 21 simulation projects; provide an overview of relevant NETL in-house projects and capabilities; and be introduced to the ISU VR facility and its capabilities.
- Develop a statement of what we are trying to accomplish.
- Outline a virtual simulation roadmap, including deliverables and timing (year).
- Develop a list of next steps that address both technical and management issues for a virtual simulation program.
- Address additional topics suggested by participants.

**Agenda:**

### Day 1

8:00-8:30 Registration

8:30-8:45 VRAC Director's Welcome - Jim Bernard (ISU Virtual Reality Applications Center Director)
Meeting Objectives - Larry Ruth (NETL)

8:45-11:30 ISU VRAC facility - Mark Bryden and ISU staff
8:45 - 9:00 Overview of VRAC and virtual engineering
9:00 - 10:00 Lab Tours (break into four groups)
10:00- 10:15 Break
10:15 - 11:15 Lab Tours – Continued
11:15 - 11:30 Collaboration demo

11:30-12:00 Virtual Engineering at John Deere – Jerry Duncan

12:00-12:45 LUNCH – on site

12:45-2:45 Vision 21 Simulation Projects (objectives, approach, accomplishments, significance)

"Development of the Vision 21 Planner Computer Model" – Ed Rubin (Carnegie Mellon University)

"Virtual Simulation of Vision 21 Energy Plants" – M. Syamlal (Fluent, Inc.)

"Management of Data through Design, Simulation, and Virtual Engineering Phases - Simulation Phase" – P. Simon (Intergraph Corporation)

"Coarse-Grid Simulation of Reacting and Nonreacting Gas-Particle Flow" – S. Sundaresan (Princeton University)

2:45-3:00 Break

3:00-5:00 Vision 21 Projects, continued

"LES Software for the Design of Low Emission Combustion Systems for Vision 21 Plants" - C. Smith (CFD Research Corporation)

"Visualization of Fluidized Bed Dynamics Using POD – A. Palacios (San Diego State University)

"Computational Workbench Environment for Virtual Power Plant Simulation" – M. Bockelie (Reaction Engineering International )

DOE NETL CES Projects/Facilities Relevant to Vision 21 Simulation – E.J. Boyle, NETL

5:00-5:15 Wrap-up discussion and preparation for day 2 – Larry Ruth

**Day 2**

7:45 - 8:15 Continental Breakfast

8:15 – 10:15 Roundtable Discussion on Vision 21 Modeling and Simulation - facilitated by Mark Bryden and Jerry Boyle (2 breakout groups)

DISCUSSION TOPICS/GOALS

- Summarize significant accomplishments of ongoing simulation activities.
- Develop a brief statement describing what we are trying to accomplish in the overall Vision 21 simulation effort.
- Outline a Vision 21 simulation time bar giving products (e.g., capabilities, deliverables) and completion times out to 15 years.
- Develop a list of critical next steps and priorities (3-5 years out).
- Describe key management issues.
- Address additional topics suggested by participants.

10:15 - 10:30 Break

10:30 - 11:30 Discussion Continues

11:30 - 12:00 Summary / Wrap Up - Larry Ruth

Adjourn